# Manitoba Ag-Ethanol Strategy

## Manitoba Agriculture and Food

## Information Update

April 2003

Ethanol has a promising future in Manitoba. Recent studies have confirmed that ethanol produced from Manitoba wheat is the cleanest grain-based ethanol in North America. Mandating ethanol in Manitoba at 10 percent blends will cut green house gas emissions by 135,000 tonnes. Ethanol produced from Manitoba wheat also shows a net positive energy balance of 44 percent (for more information see Manitoba's ethanol website at www.manitobaenergy.com ).

Manitoba's ***Ag-Ethanol Strategy*** outline - an information update - is based on the recommendations for action contained in the Ethanol Advisory Panel's report. Many of the 32 recommendations pertain specifically to agriculture. This document is not intended to be final and comprehensive but a starting point for discussion on needed actions in partnership with livestock producers, grain producers, agri-sector partners and the Manitoba public. Discussions will occur with stakeholders in the coming months. If you would like to comment, please send your thoughts and suggestions to the address at the bottom of this document.

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Ethanol production in Manitoba enjoys the support of Manitoba farmers because of the value-added potential. Potential advantages include:

- ✓ Reduced transportation costs for farmers supplying feedstock;
- ✓ Increased feedstock price in vicinity of ethanol plant;
- ✓ Availability of high quality distillers' grain (DG) for livestock feed; and
- ✓ Sustainable development of rural communities by adding value to locally grown crops.

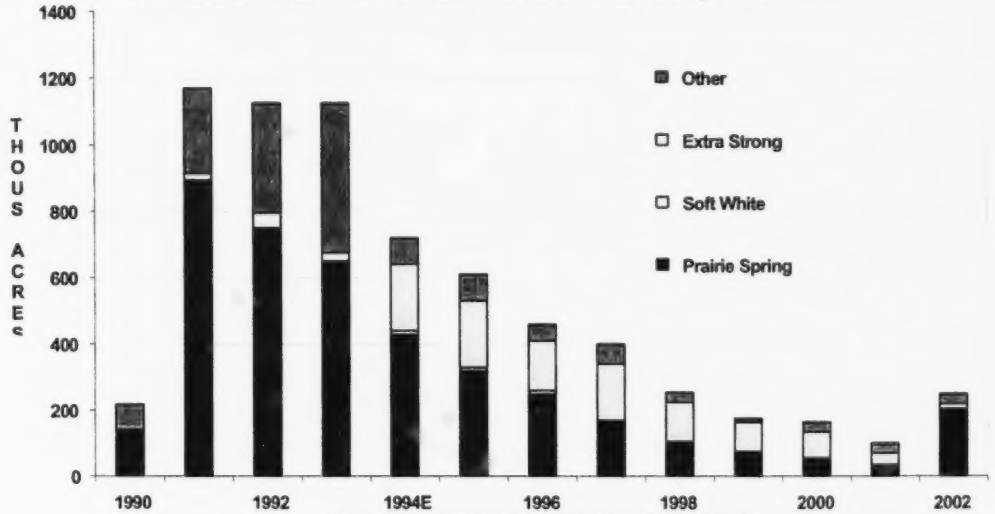
**Feedstock:**

Manitoba farmers are among the best in the world at growing high quality crops such as wheat. An ethanol mandate in Manitoba will require about 143 million litres of ethanol generated from approximately 14 million bushels of wheat.

Some have suggested there are ample supplies of wheat yet others question whether Manitoba has enough feedstock to consistently supply this market. Historical evidence supports sufficient supply.

The removal of the Crow rate resulted in higher costs of getting the wheat to market. Farmers have reacted to that change in policy by growing less wheat for export. However, the historical evidence shows Manitoba farmers have the potential to grow more wheat than has been the practice in recent years. Over the last decade, Manitoba farmers still produced between 117 and 216 million bushels of wheat annually. As shown below, between 1990 and 1991 farmers increased production of other wheat varieties suitable for ethanol by about one million acres, which is double that required for ethanol today.

**MANITOBA, SEEDED AREA**
**SPRING WHEATS OTHER THAN HARD RED, 1990 - 2002**




(NOTE: STATUTORY FREIGHT RATE CHANGE OCCURRED MID-'94/05)

*Market Analysis & Statistics Section, Manitoba Agriculture and Food*

Manitoba also produces an average of 8.25 million bushels of grain-corn annually which, if used exclusively for ethanol, would support an 80 million-litre plant. The Ethanol Panel Report demonstrates that Manitoba grain producers are willing to adjust their current growing practices to maximize economic opportunity.

The Manitoba Government has already begun work to prepare for a new, world-class ethanol industry in Manitoba. Higher yielding disease-resistant wheat varieties and sustainable on-farm production practices will be a major component of our strategy:

- ✓ We continue to pursue with the Canadian Grains Commission (CGC) the need to license new high-yield and disease resistant varieties of wheat. Varieties have already been developed that have the potential to increase yields by 20-40%. CGC is already working on new methods of distinguishing one variety from another, which may assist the licensing of new varieties;

- ✓ In partnership with Agriculture and Agri-Food Canada we will be testing 12 high-yielding and disease resistant varieties of wheat in plots around Manitoba this growing season; and

- ✓ Some farmers supplying the Minnedosa ethanol plant find an economic advantage growing winter wheat. We intend to explore this further with our on-farm and ethanol-producing partners.

Manitoba grain producers have said that they will increase production of feedstock, mainly wheat, to supply a new ethanol industry. On occasion, growing conditions may require some import of grains from our neighbours in Saskatchewan and Minnesota. In order to limit these imports, we will explore the opportunities to use other Manitoba feedstocks as a source of starch for ethanol. The ethanol panel heard a perspective from several producers on this possibility:

'We have a competitive advantage being located in close proximity to other grain jurisdictions. Worst case scenario - a drought year - would see us importing some subsidized Minnesota corn, adding value to it in Manitoba, and shipping the ethanol back to the US for sale!'

There are many factors that will reduce the need and economic justification to import grain from other jurisdictions:

- Increased transportation costs;
- Costs of ethanol production in Manitoba are expected to be lower than in Minnesota;
- Wheat produces higher value DG than corn; and
- Manitoba is less subject to drought conditions than Saskatchewan.

Fusarium is a current issue for Manitoba grain producers. Fusarium infected wheat will produce high quality ethanol but the distillers' grains remain infected – leaving a problem for livestock which have been shown to have limited tolerance to fusarium infected feed. Manitoba Agriculture and Food will continue working on this issue and will consider options for research opportunities, treatment of grain, resistant varieties, and other uses for distillers grains. A large ethanol plant has the opportunity to blend fusarium infected DG down to acceptable levels with non-infected DG.

## Distillers' Grains

Distillers' grains are a valuable, high-protein livestock feed. The potential estimated use is shown in the chart below:

DDG Feed Rates

| Species | Animal Population | Range of DDG Feed Rates, (lbs./day) | Maximum Annual Consumption (tonnes) | Reasonable Annual Consumption (tonnes) |
|---|---|---|---|---|
| **Dairy Cows** | 35,000 | 4-12 | 40,000 | 20,000 |
| **Cattle** | 550,000 | 0-9 | 135,000 | 45,000 |
| **Swine** | 2,700,000 | 0.4-0.8 | 400,000 | 150,000 |
| **Turkey** | 700,000 | 0.05-0.10 | 10,000 | 5,000 |
| **Chickens** | 10,000,000 | 0.006-.024 | 5,000 | 2,000 |
| **Other** | | | 10,000 | 5,000 |
| **Total** | | | 600,000 | 227,000 |

***Source: S&T Consultants***

Currently Manitoba livestock producers import annually over 200,000 tonnes of soybeans and meal, largely from Minnesota. The availability of locally supplied, high-protein DDG presents an opportunity for Manitoba's feed and livestock industries. In recent years, soybean meal has been priced at $275-300/tonne. The selling price of wheat DDG has been in the $150-$200/tonne range. Using Manitoba Wheat DG will result in significant savings for the Manitoba livestock industry.

Protein Content

| | Wheat DDG | Corn DDG |
|---|---|---|
| **DDG Yield, %** | 36 | 33 |
| **DDG Protein Content, %** | 35 | 27 |

Source: S&T Consultants

The value of Dried Distillers' Grain (DDG) is determined by the protein content.

Much work has already begun:

- ✓ Evaluation of policy tools to promote cattle feedlots;
- ✓ Examining opportunities of mixing high-protein distillers' grain products with low value straw or chaff to provide an economical feed source;
- ✓ Minnesota research on corn DDG use in swine, beef, dairy and poultry is being evaluated – preliminary results are very positive;
- ✓ We have taken the lead in establishing a Feedstock/Co-product Working group in partnership with the Saskatchewan and the Federal Governments;
- ✓ Nutritional analysis is underway at Prairie Swine Centre;
- ✓ Minnesota is marketing corn distillers' grains under brand name of "Minnesota Gold"; and
- ✓ Initial discussions have occurred relating to researching DG for possible human consumption.

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Together in partnership we can build a viable value added industry in Manitoba.

We invite your comment on our proposed Ag-Ethanol Strategy outline. Please contact us at:

Ag-Ethanol Strategy
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# Ethanol and The Environment
# Fact Sheet

## Q#1: What are the environmental benefits of using ethanol?

- Mandating ethanol in Manitoba at 10 percent blends will displace consumption of 143 million litres of gasoline – an imported fossil. The Green House Gas emission reductions are equivalent to taking approximately 10,000 vehicles off the road.
- Mandating ethanol in Manitoba at 10 percent blends will cut GHG emissions from the consumption of gasoline by 5 percent or approximately 135,000 tonnes per year.
- According to data in a recent study commissioned by Natural Resources Canada, MANITOBA ETHANOL BLENDED AT 10% WITH GASOLINE WILL BE THE CLEANEST GRAIN BASED ETHANOL IN NORTH AMERICA! (due to renewable electricity used in production process – new plants only).
- Manitoba made ethanol will result in 44% more energy gained than is required to produce it.
- Mandating ethanol in Manitoba at 10 percent blends will reduce carbon monoxide from the tailpipe by up to 25 percent
- Ethanol use reduces particulate emissions substantially - anywhere between 25 percent and 32 percent depending on the vehicle. Particulates have been fingered as a cause of respiratory ailments. Ethanol displaces the uses of toxic gasoline components such as benzene - a carcinogen.
- The American Lung Association of Chicago credits ethanol with reducing smog-forming emissions in the city by 25 percent since 1990.
- Ethanol has received the ECO-LOGO designation from Environment Canada, recognizing its environmental benefits over conventional gasoline.

## Q#2: I know ethanol itself is clean and renewable but what about ethanol plants themselves? Are they harmful to the environment?

- The Manitoba Government will require state of the art energy efficiency in new ethanol plants. Modern production techniques cut down and in some cases eliminate particulates that would otherwise be thrown into the air.
- Concerns with the use of fresh water in ethanol production are also based on outdated information. Ethanol production processes have improved significantly over the last 20 years. An 80 million litre modern plant is expected to use less water than a plant built 20 years ago that is 1/8 the size.

Phone Manitoba Ethanol Office at 945-EGAS or toll free at 800-945-8299 ext. 3427 for more information.
You can also reach us by email at ethanol@gov.mb.ca